MC0067

HOSPITAL BUILDING NOTE

PHYSIOTHERAPY DEPARTMENT

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MINISTRY OF HEALTH
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Physiotherapy Department

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I. Scope

The following notes are issued to give guidance on the planning of a Physiotherapy Department for a General Hospital. They apply generally to undergraduate and post-graduate teaching hospitals. Where there is a school of physiotherapy substantially more treatment cubicles and the larger gymnasium will be required because students take longer to handle and treat patients and allowance has to be made for the time taken to instruct students. A supplementary note on the additional requirements for a School of Physiotherapy will be issued later.

II. General considerations

This Department is part of the Department of Physical Medicine (which includes a consultative suite and occupational therapy department). The Occupational Therapy Department will be considered in a separate Building Note. The Department of Physical Medicine should be planned as a whole (see Figure 1), allowing for future expansion.

The Physiotherapy Department provides treatment for both in-patients and out-patients although, in general, out-patients form by far the greater proportion. This treatment is broadly of two types—active, in the form of group and individual treatment, mainly remedial exercise in a gymnasium or smaller exercise room, and individual passive treatment, including massage, manipulation, heat and assisted movements and various forms of electro-therapy given as a rule in cubicles or in the wards. Recent trends indicate an increase in active or group treatment and a decrease in passive and individual treatment.

The Department should, wherever possible, be at ground level and conveniently sited for access by patients from the out-patients' department and from all the wards. In view of the physical disabilities of patients using this department, steps should always be avoided and where a change of level is necessary, ramps which are very easy going are preferred.

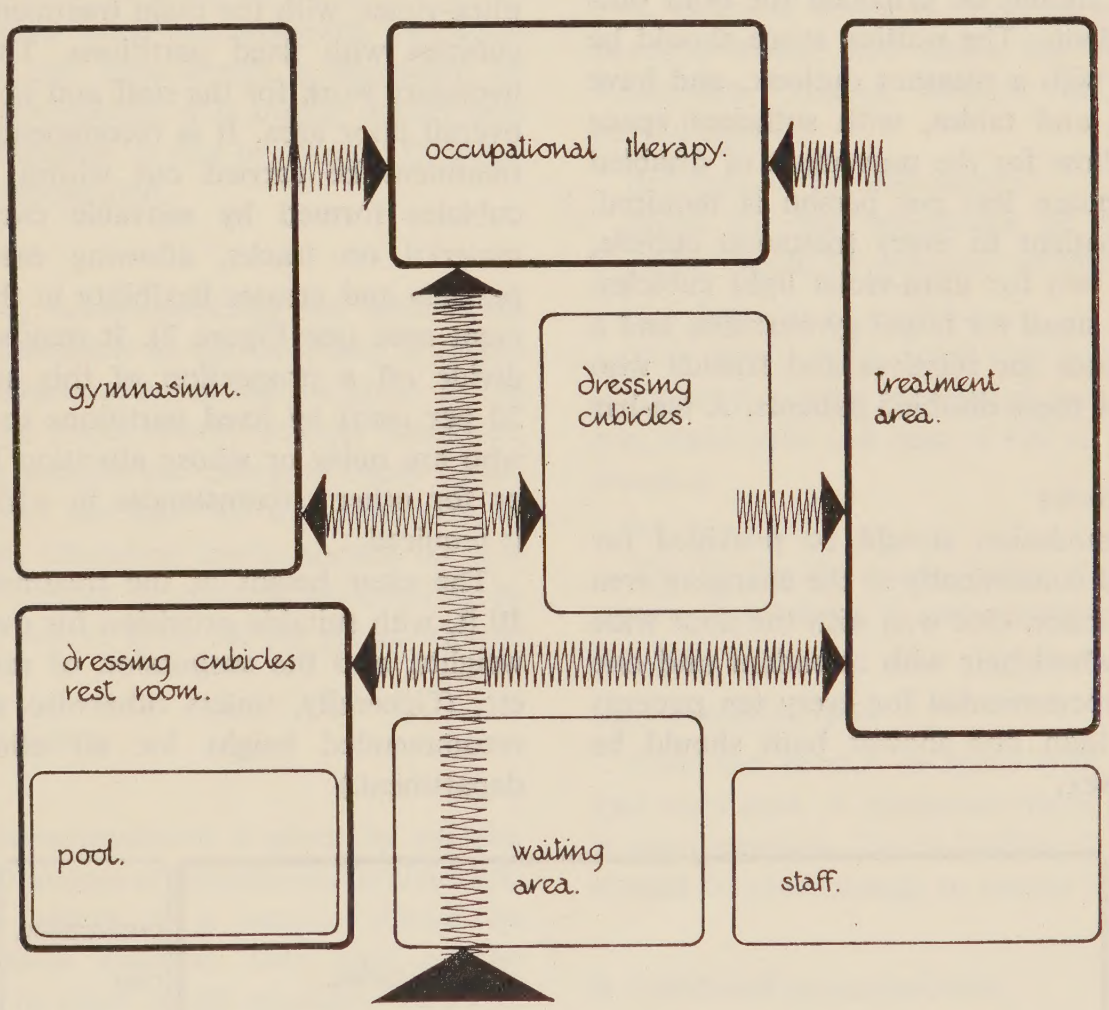

Figure 1. Diagram showing patient circulation

III. List of rooms

The accommodation for the Physiotherapy Department has been divided into two groups:

A Basic accommodation

The following accommodation should be provided for a Physiotherapy Department requiring from 8 to 20 cubicles. Where a smaller department is required, that marked with an asterisk might be shared with adjacent departments:

(*a*) *Waiting area*

* (i) Waiting-room or bay
*(ii) Patients' lavatories

(*b*) *Passive treatment area*

(i) Treatment cubicles
(ii) Preparation bay

(*c*) *Changing rooms*

(*d*) *Active treatment area*
(i) Gymnasium

(*e*) *Staff*
(i) Staff room
*(ii) Staff cloakroom and lavatories

(*f*) *Offices*
* (i) Reception office and records
(ii) Superintendent physiotherapist

(*g*) *Storage*
* (i) Linen
*(ii) Cleaners' room
(iii) Parking for wheel-chairs
(iv) Gymnasium equipment
(v) Apparatus for passive individual treatment

(*h*) *Circulation space*
Within the area of the above accommodation

Functional unit

The functional unit selected for the basic accommodation in this note and the related cost note (Appendix E to Building Note No. 2) is the individual treatment unit (the unit currently adopted for hospital costing purposes). The number of cubicles needed is proportionate to the number of individual treatment units for which the department is intended to cater, 40 individual treatment units per week normally justifying the provision of one cubicle.

B Additional accommodation

In some physiotherapy departments accommodation additional to the basic may be required, e.g.:

(*a*) Hydrotherapy pool and ancillary rooms
(*b*) Consulting room(s)
(*c*) Apparatus gymnasium

IV. Description of rooms

A Basic accommodation

(*a*) *Waiting area*

(i) *Waiting-room or bay*

Accommodation should be provided for both out-patients and in-patients. The waiting space should be well lit, preferably with a pleasant outlook, and have comfortable chairs and tables, with sufficient space between them to allow for the movement of disabled patients. Fifteen square feet per person is required, allowing for one patient to every treatment cubicle, plus two for wax, two for ultra-violet light cubicles, eight (twelve) for a small (or large) gymnasium, and a 25 per cent allowance for relatives and friends who accompany many of these disabled patients. A tea-bar should be installed.

(ii) *Patients' lavatories*

Lavatory accommodation should be provided for both sexes and sited conveniently to the changing area and to the waiting space. One w.c. with the door wide enough to take a wheelchair with attendant and one lavatory basin is recommended for every ten patients waiting. Not less than one shower bath should be provided for each sex.

(*b*) *Passive treatment area*

It has been the practice in the past to provide separate rooms for certain types of treatment, e.g., ultra-violet, with the main treatment area divided into cubicles with fixed partitions. This resulted in unnecessary work for the staff and limited the use of the overall floor area. It is recommended that all passive treatment be carried out within one large area in cubicles formed by movable curtains of washable material on tracks, allowing easier supervision of patients and greater flexibility in the use of the treatment area (see Figure 2). It may still be desirable to divide off a proportion of this area (not exceeding 20 per cent) by fixed partitions to segregate children who are noisy or whose attention is easily distracted, or for other circumstances in which greater privacy is required.

The clear height of the treatment area should be 10 ft. with suitable provision for overhead pulleys and weights, and the suspension of radiant heat cradles, etc. (Generally, unless otherwise stated, 8 ft. is the recommended height for all other spaces in this department.)

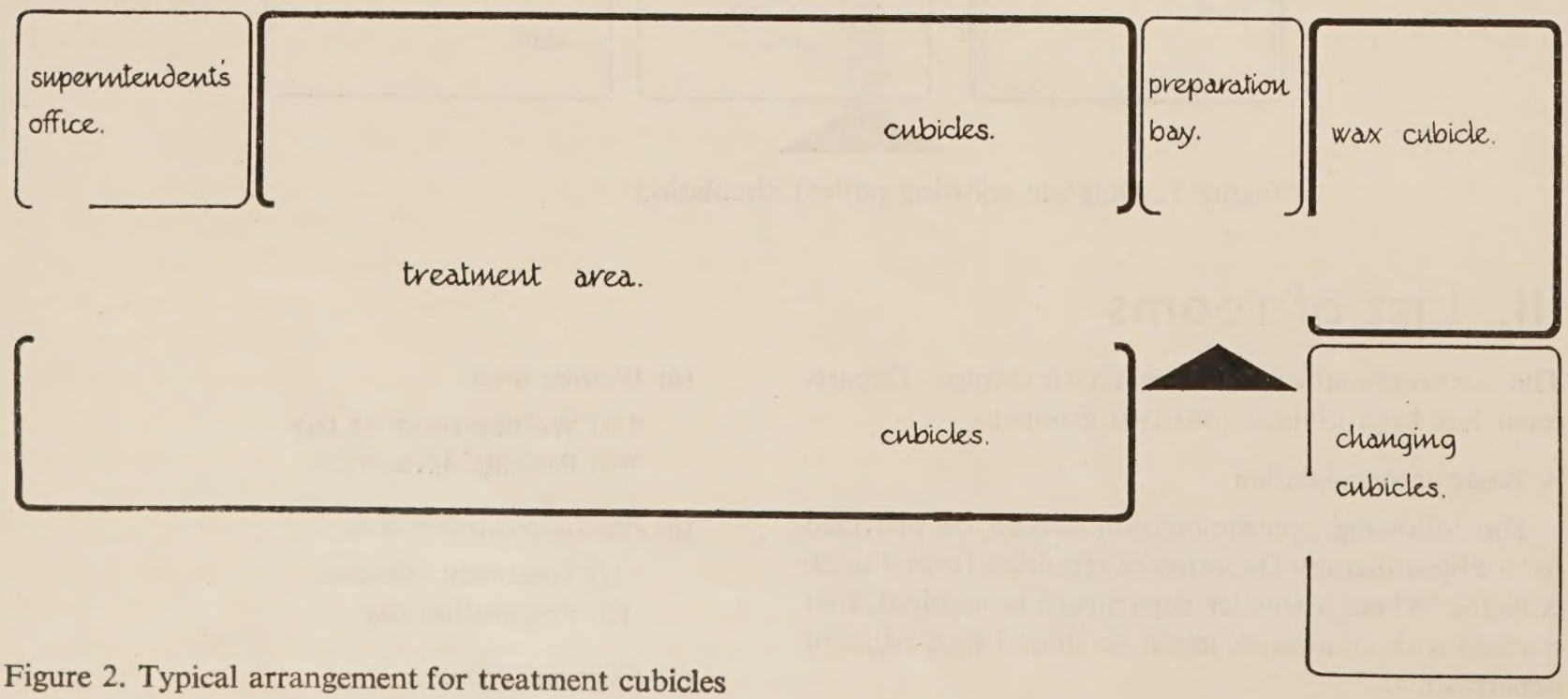

Figure 2. Typical arrangement for treatment cubicles

(i) *Passive treatment cubicles*

A minimum size of 7 ft. 6 ins. long is recommended for treatment cubicles to allow for a treatment couch, one or two chairs, mobile electrical equipment and a shelf for lighter equipment. A quarter of the total number of cubicles should be 7 ft. 6 ins. by 11 ft. or 12 ft. long to allow for medical diathermy apparatus with its electrode carrying arms to be used at the head of the treatment couch. Provision for paraffin wax treatment and plaster splint making should be continued in a separate room or cubicle 15 ft. by 12 ft. long and fitted with a sink, plaster trap and storage cupboard.

A clear 6 ft. passageway should remain between rows of cubicles when the curtains are closed to allow patients in wheelchairs to pass.

A washable non-slip tile or similar floor finish is necessary for the wax cubicle and cork tiles or similar floor finishes are suitable for the treatment area, waiting area, offices and corridor. Obscure glass or blinds may be required in the treatment area where cubicles are overlooked.

(ii) *Preparation bay*

This is where the treatment and dressings trolley is prepared. A sink, a lavatory basin and a low level tap for filling arm and leg baths are necessary. Provision for sterilising bowls and instruments is dependent on whether a central sterilisation and supply department is provided in the hospital. A size of about 7 ft. 6 ins. by 8 ft. 6 ins. is recommended.

(*c*) *Changing rooms*

Patients' changing accommodation for both sexes should be equally accessible to the treatment area and the gymnasium. Consideration should be given to the provision of lockable boxes or wire baskets which can be placed in a rack outside the changing room within sight of a member of the staff for the protection of patients' belongings. Changing rooms should be provided for half the number of patients expected to be treated at one time. About 10 sq. ft. per person should be provided.

(*d*) *Active treatment area*

(i) *Gymnasium*

It is here that active treatment is given by exercise of various kinds with groups of patients and individuals. Whenever possible access to a terrace should be provided for out-door exercise. One wall of the gymnasium should be clear of all openings, etc., and suitable for fixing wall bars and other apparatus. The minimum recommended size is 24 ft. by 48 ft. by 15 ft. high but 30 ft. by 60 ft. by 18 ft. high should be provided in the larger department so that shoulder and trunk exercises, by means of ball games, etc., can be carried out. A hardwood floor is essential for the gymnasium. Window-sills to the gymnasium should, wherever possible, be at least 8 ft. above floor level and windows should be guarded and open outwards.

(*e*) *Staff*

(i) *Staff room*

A staff room will be required with an area of about 10 sq. ft. per person, with a minimum area of 100 sq. ft.

(ii) *Staff cloakroom and lavatories*

The staff of physiotherapy departments change from indoor clothing into overalls or gym wear. About 15 sq. ft. per physiotherapist should be provided for changing. One physiotherapist normally attends to two treatment cubicles. One w.c. and a separate lavatory basin should be provided for every eight staff. Separate changing accommodation is required for either sex.

(*f*) *Offices*

(i) *Reception office and records*

This should be adjacent to the waiting area and have a service counter. The patients' departmental working records kept here are not bulky, but the staff use this room frequently for access to notes, etc. An area of at least 120 sq. ft. should be provided.

(ii) *Superintendent physiotherapists*

About 100 sq. ft. is recommended for this office.

(*g*) *Storage*

(i) *Linen*

Space adjoining the treatment area is required for blankets, sheets and pillows. About 4 sq. ft. of shelf space per treatment cubicle is recommended.

(ii) *Cleaners' room*

A cleaners' room is required with a bucket sink, drainer, locker and space for mechanical cleaning equipment, brooms, buckets, etc. Fifty square feet should suffice.

(iii) *Parking for wheelchairs*

Space for one wheelchair to every five treatment cubicles should be provided within the treatment area.

(iv) *Gymnasium equipment*

This store, which could also serve as a small office, is required for the storage of a variety of equipment, e.g., hand balls. An area of 100 to 120 sq. ft. is recommended.

(v) *Apparatus*

This is for the more bulky electro-medical equipment. About 6 sq. ft. per treatment cubicle is recommended.

(*h*) *Circulation space*

Corridors should be fitted with hand-rails, well lit and ventilated. A minimum width of 7 ft. in the clear is recommended. Doors leading to the treatment area should be wide enough to permit the passage of a bed.

B Additional accommodation

(i) *Hydrotherapy pool and ancillary rooms*

The accommodation required consists of a pool, changing cubicles for patients and staff, patients' lavatories, rest room and a utility room. The pool should be rectangular with minimum internal sizes of 12 ft. by 6 ft. 6 ins. by 5 ft. deep. The parapet should be 2 ft. 8 ins. above floor level to enable staff to handle patients without entering the water. The floor of the pool should be divided longitudinally into two levels, one side giving water depth of 4 ft. 6 ins. and the other side 3 ft. 9 ins., the change of depth being clearly marked by contrasting colours. There should be two overflow levels, one at 4 ft. 6 ins. and the other 15 inches lower to give a maximum depth of 2 ft. 6 ins.

on the shallower side. An overhead track should extend over the pool with power operated lifting gear to carry a suspended stretcher, etc. Access steps for patients should have rises not exceeding 6 inches. For a pool of this size two patients' changing cubicles, one large enough for a stretcher and attendant, a shower cubicle and one w.c. wide enough to take a wheelchair with attendant would be required. The floor of the pool should have non-slip tiles. A rest room of about 250 sq. ft. to take four couches is required for patients to lie down after treatment. The utility room (80 sq. ft.) should contain a sink, a spin dryer, drying cabinet and storage for dry stock, and be convenient to the pool (see Figure 3). A stretcher bay and a staff changing cubicle should also be provided. The recommended clear height is 10 ft. over the hydrotherapy pool. Other rooms need not exceed 8 ft. in height.

(ii) *Consulting room(s)*

Consulting facilities may be required and, where provided, one or more combined consulting examination rooms of 170 sq. ft. or alternatively a separate consulting room of 120 sq. ft. with two examination rooms of 90 sq. ft. adjoining are recommended.

(iii) *Apparatus gymnasium*

In larger departments a separate gymnasium may be required for special apparatus such as stationary bicycles, slings and pulleys.

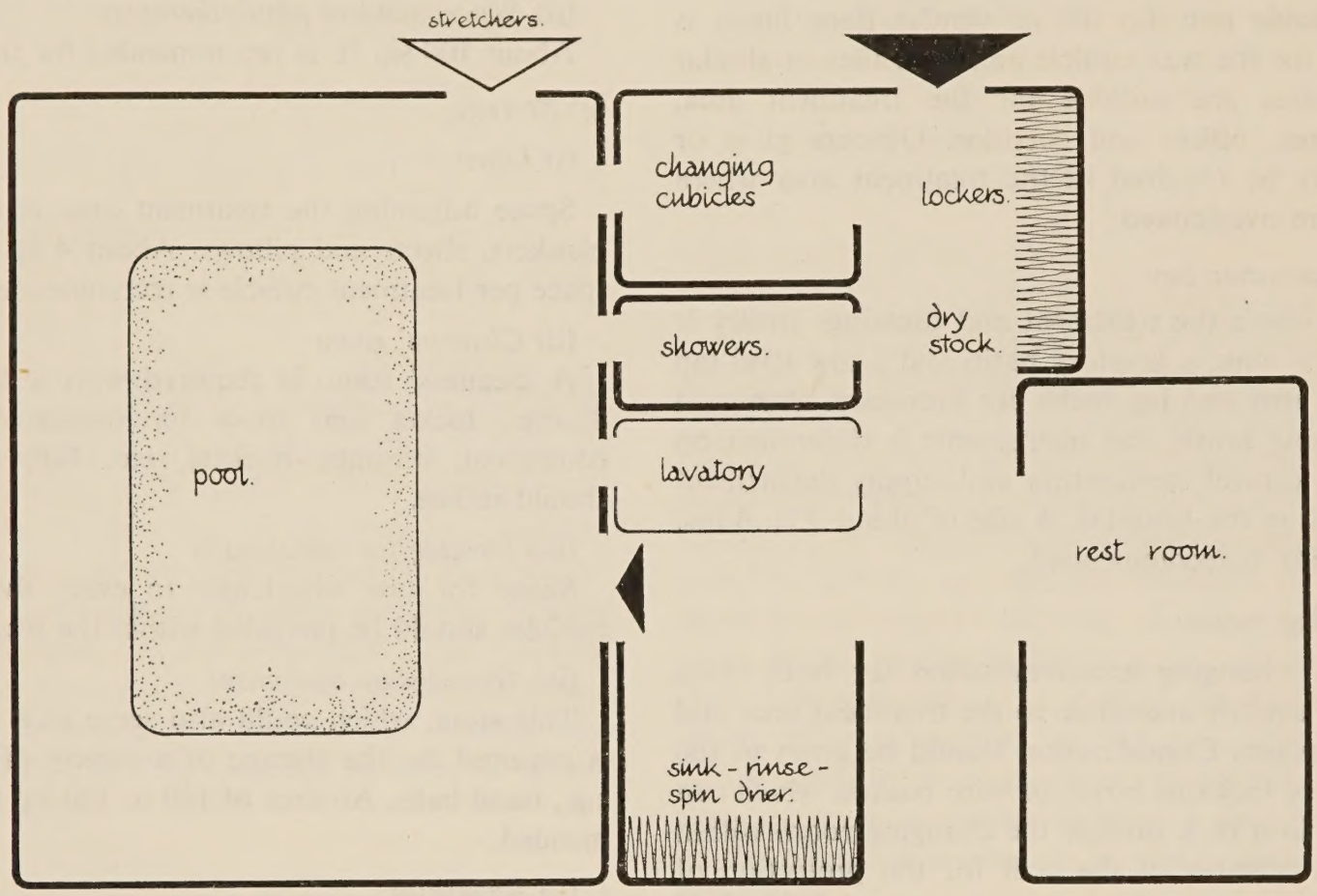

Figure 3. Typical layout of hydrotherapy unit

V. Engineering services

It is essential that the engineering services should be designed and installed in such a way to ensure ease of maintenance with the minimum interruption of services and disturbance to the working of the hospital in the event of repairs being required.

The need for meters for departmental costing purposes should be considered where these can be installed conveniently and inexpensively.

A Mechanical services

Heating and ventilation

Space heating requirements should be calculated on the following room temperatures and fresh air ventilation rates based on an outside temperature of 30°F.:

	Temp. °F.	*Air change*
Treatment cubicles and rooms	70	4 fresh air +2 recirculated
Preparation bay	70	2
Patients' changing area ...		
Rest room		
Hydrotherapy pool room...	75	4 to 6
Gymnasium	65	1½
W.C. compartments and corridors	65	2
Cleaners' room	60	2
Equipment stores	50	½
Offices, waiting rooms, etc.	65	2

(In this department w.c. compartments and corridors require additional warmth.) The hydrotherapy pool

rooms will require simple extract ventilation at high level to reduce humidity.

The heating and ventilating requirements will best be met by filtered warm air heating in the treatment cubicles and hot water radiators elsewhere, recessed or flush fitting where necessary. Alternatively in the gymnasium, recessed fan-assisted convectors may be preferred. Except where mentioned above, it is not thought that mechanical air extraction should be necessary.

The heating needs of the department tend to commence earlier and finish later in the season than those of the hospital generally. Provision should, therefore, be made for the installation to have a separate circuit so that the treatment room, changing cubicles, etc., can be heated when the hospital's general heating mains and pumps are not in use.

The heating and ventilating systems should be provided with controls readily accessible to the staff of the department, to enable minor adjustments to be made by them.

It is extremely important that the type of opening window is carefully selected to permit ventilation without draughts to lightly clad patients.

Top opening windows at high level having a "minimum setting" notch or other adjustment are to be preferred.

Systems using natural ventilation have been developed and the use of these may be considered as alternatives to systems using extract fans for the ventilation of internal rooms, including lavatories.

An extract fan placed at high level may be required in the preparation area to assist the removal of steam from the small bowl instrument steriliser, when it is provided.

To prevent condensation in the hydrotherapy room, the walls and roof should have high insulating value and windows should be double glazed. Radiators should be placed where they will warm the air entering the rooms, particularly below windows and against exposed walls.

Hot and cold water and drinking water services

These are normally provided from the main services of the hospital to serve lavatory, basins and sinks. Normal or spray type pillar taps should be provided.

Shower baths should be of the needle-spray type and thermostatically controlled. The shower fitting should be provided with a hand spray and designed to permit of feet washing.

A drinking water supply point from the mains with an "automatic" carton dispenser should be provided in, or adjacent to, the patients' changing space.

Hydrotherapy pool

The water in the pool should be maintained at a selected temperature in the range of 90/105°F. It may be provided with hot water by connection to the general hot water service, by a small heating calorifier through which the pool water is continuously recirculated, or, less preferably, by steam injection. The pool will require regulated chlorination injection. A cold water tap with hose connection for cleaning the pool is also necessary. A tap with hose connector served from a hot and cold water thermostatic mixing valve for a contrasting douche should be included.

Where the water is changed not less than thrice weekly, continuous filtering should not be necessary but a strainer should be provided in the pumped circulating water system.

A traversing hoist over the pool will be required. If electrically operated it should be specified to give slow and smooth lifting and lowering speeds. It should be provided with an automatic brake or clamping device to prevent any unintentional movement.

The installation will require particular attention in respect of safety from electric shock and in maintenance and simplicity of operation.

Underwater lighting is not required.

It should be noted that the atmosphere of this room may have a corrosive effect on metals.

Gas service

This is unlikely to be required.

Fire alarms and fire-fighting equipment

Advice on fire alarms and extinguishers is given in British Standard Codes of Practice and in Circular H.M.(56)36, Hospital Fire Precautions. Treatment rooms should have CO_2 extinguishers provided readily at hand.

B Electrical installation

General

The electrical installation will include wiring and equipment for general and special lighting, socket outlets, heating and ventilating, telephones, clocks and call systems.

Supply and distribution

Unless a distribution centre conveniently situated to serve other departments is available, a switch compartment should be provided to supply the physiotherapy department. Distribution boards should be centrally placed to reduce the length of circuit wiring and preferably they should be easily accessible from corridors and fitted with locks when they are accessible to unauthorised persons.

H.R.C. fuses are recommended and spare ways and fuses should be provided. Conduits and cables should generally be concealed, service ducts being provided wherever practicable.

Socket outlets

Sufficient 13 amp. universal shuttered outlets (B.S. 1363) on ring circuits should be provided to allow each portable appliance which is likely to be used at the same time to be connected to a separate outlet. Other types of sockets should be provided only where there are special reasons, e.g. for low-voltage circuits.

A twin switch socket-outlet unit should be provided in each cubicle, at each treatment position, and in each office.

Socket outlets to be used with non-luminous heating appliances, e.g., wax baths and small steriliser, should be equipped with a neon-type indicating lamp.

Additional general purpose socket outlets should be provided as necessary throughout the department, including corridors, to enable the use of portable

domestic cleaning apparatus having leads assumed to be 30 ft. long.

Attention is drawn to the importance of minimising exposed earthed metal-work within reach of patients receiving medical diathermy treatment and to the effective earthing of all electro-medical apparatus which contains equipment operating at mains potential.

Patient call systems

A buzzer warning system will normally be required to enable unattended patients to call for assistance in the event of discomfort arising from their treatment. The usual provision is a pear type bell push with indicator lamps at the treatment position and an indicator board, with alarm buzzer, in a central position where it will be readily seen by staff. Where groups of cubicles are situated some distance apart it is usually preferable to have a separate patient call system for each group of cubicles.

General lighting

General lighting should follow normal hospital practice and special lighting applicable to this department should have the following recommended average illumination levels at 3 feet above the floor:

Treatment rooms and cubicles	20	lumens/sq. ft.	
Consulting rooms	20	„	„
Gymnasium	10	„	„
Staff room	10	„	„
Hydrotherapy pool	10	„	„
Cleaners' room and corridors	5	„	„

It is considered that local switch control for rooms and cubicles will be satisfactory, but lighting fittings in corridors, public waiting spaces, etc., and illuminated signs should be controlled from the reception office.

Lighting for treatment area (Cubicles)

The general lighting of this area may be controlled from wall switches and the cubicles may have a centrally placed pendant lighting fitting controlled by a cord-operated ceiling-mounted switch located about a foot from the pendant. Pendants should have tubular supports and be of a direct lighting type with a diffuser to reduce glare to the patients on a couch below.

Wall-bracket lighting fittings have been found unsatisfactory for cubicle lighting but a portable lamp connected to the socket outlet may be used for a spot light.

Gymnasium lighting

Lighting fittings in the gymnasium should be mounted direct on to the ceiling and have the minimum downward projection. They should have non-splintering enclosures. Fluorescent type fittings with strong clear plastic enclosures have been found to be satisfactory.

Emergency lighting

This is not normally considered necessary, but if a system is already available it may be extended to main corridors and waiting spaces.

Telephones

There is a heavy telephone traffic in this department, mainly in the making and cancelling of appointments for both "in" and "out" patients. Extensions from the hospital exchange both for external and internal calls should be provided to the consultant's room, superintendent physiotherapist's office, reception office and to a central position convenient to the treatment cubicles.

Staff location system

A wired staff location system or a radio induction system will be provided as part of the general staff location system of the hospital.

Electric clocks

Where an impulse clock system exists it should be extended to the physiotherapy department to serve the rooms listed, using silent clocks:

Consulting room, treatment room, gymnasium, reception office, superintendent physiotherapist's office, staff room and hydrotherapy pool room.

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